

DATA COMMUNICATION NETWORK

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ABSTRACT

A method of generating routing tables for a data communication network.

With the method the network is defined in terms of a plurality of nodes (N0.1-N0.10) interconnected by links across which data travels. The method then simplifies the
10 network into a deterministic structure through a series of recursive abstractions identifying one or more logical levels, with each logical level defining groupings of nodes based on closed rings (R1.1, R1.2, R1.3, R1.4, R1.5). The routing table is then populated with routes based on the logical levels that provide a deterministic path to each destination and the diversity of paths that can be used to follow that route based on the
15 underlying closed rings in each lower logical level. The method thereby enables deterministic routing to be achieved whilst providing a rich set of diverse paths across the network for each route. The method is also particularly suited to both responding quickly to congestion or failure at a local part of the network as well as responding progressively to congestion or failure in distant parts of the network.

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